IN THE SPECIFICATION

1. Please delete the paragraph on page 5, which begins with the phrase, "The present invention provides a solution ...," in its entirety.

2. Please replace the paragraph on page 8, which begins with the phrase, "Fig. 2 is a vertical sectional view of a hub ...," as follows:

Fig. 2 is a vertical sectional view of a hub <u>201</u> supported by dual conical and journal bearing 200 for rotation about a shaft (not shown). <u>At least one disk 202 is in turn supported upon an outer surface of the hub 201.</u> The hub 201 is typically integrated with a sleeve as shown herein whose internal surfaces define the grooves which form the hydrodynamic bearing which supports the hub for rotation. As is well-known in this technology, a shaft (not shown) is inserted within the sleeve and has dual male conical surfaces which face the conical regions 210, 212 in the sleeve at the upper and lower ends of the bearing region. The shaft would further include a smooth center section which would cooperate with the journal bearings defined by the grooved regions 214, 216. As is well-known in this field of fluid dynamic bearings, fluid will fill the gap between the stationary shaft and the inner grooved surfaces of the sleeve. As the sleeve rotates, under the impetus of interaction between magnets mounted on an inner surface of the hub which cooperate with windings supported from the base of the hub, pressure is built up in each of the grooved regions. In this way, the shaft easily supports the hub for constant high speed rotation.

3. Please replace the paragraph on page 8, which begins with the phrase, "The pressure generating grooves on the inner surface of the sleeve ...," as follows:

The pressure generating grooves on the inner surface of the sleeve can easily be seen <u>in</u> Fig. 2. They include, in the example, two sets of grooves 230, 232 for the upper cone and a corresponding set 234, 236 for the lower cone. This particular design also utilizes two journal bearings 240, 242 to further stabilize the shaft. Obviously, the present invention, which is directed especially to a method and apparatus for making these grooves rather than the design of the grooves themselves, is not limited to making this particular combination of grooved designs. For example, the apparatus and method

described could be used to make the grooves inside a single cone or a single cone cooperating with a single journal bearing or dual cones cooperating with one or more journal bearings. Further, each of the conical bearings could have one or more sets of grooves. The principles of the present invention are to be especially applicable in forming any design of conical bearing in the sleeve or bearing seat portion of the design. The solution provided by this invention is important in defining conical bearings because manufacturability issues associated with conical parts often make it difficult to control the diameter of the cones.

4. Please replace the paragraph on page 9, which begins with the phrase, "Given this ...," as follows:

Given this, it is extremely hard to make a tool with fixed electrodes that will guarantee a consistent work piece to electrode gap. As described above, this gap distance is paramount to the accuracy of groove depth. Considering fluid dynamic bearings, the importance of the accuracy of grooves is that a fluid dynamic bearing generally comprises two relatively rotating members having juxtaposed surfaces between which a layer or film or fluid is maintained to form a dynamic cushion ~~an antifriction medium~~. To form the dynamic cushion, at least one of the surfaces, in this case the interior surface of the hub and sleeve, is provided with grooves which induce fluid flow in the interfacial region and generate a localized region of dynamic high pressure. The grooves are separated by raised lands or ribs and have a depth generally of about 0.009 to 0.015 mm. It is readily apparent that it can be extremely difficult to form grooves having these small dimensions that are relatively closely packed on a surface. To this end, the work piece, which in this case is the hub of Fig. 2, is placed in the grooving device shown in Fig. 3. The apparatus for forming grooves using ECM is shown especially in Fig. 3.

5. Please replace the paragraph on page 10, which begins with the phrase, "When the position of the slide assembly ...," as follows:

~~When the~~ The position of the slide assembly 416 will reach equilibrium with regard to the cross-sectional flow area, hence controlling the machining gap. As noted

above, the slide assembly 416 is intended to be near frictionless in the z-axis direction 440 so that the gap dimension 420 is preferably established by the pumping pressure of the electrolyte versus the defined space of the gap[[;]] and the mass or force 432 which biases the slide assembly toward the gap.

6. Please replace the Abstract as follows:

In one aspect of the invention, ~~the gap defined between the electrode and the workpiece is automatically adjusted in response to the pressure of the inflow of the electrolyte.~~ an apparatus ~~Apparatus~~ for ECM grooving of a workpiece is provided ~~comprising a weighted or biased electrode which is mounted to automatically adjust the gap between the electrode and the workpiece in response to the pressure of the electrolyte inflow, with current flow rate being held constant.~~ ~~The female~~ A portion of a ~~dual cone or single cone work piece~~ conical workpiece is supported on a frame ~~or platen~~, with the cone opening facing ~~an axis which we shall designate the~~ a Z-axis. A slide electrode assembly is provided, ~~preferably working along an axis which coincides with the central axis for the conical workpiece. The electrode assembly comprises a static element which supports the dynamic elements of the electrode assembly, and a dynamic element which comprises~~ including an ~~a~~ electrode ~~weighted or biased by a known mass and~~ movable along the Z-axis ~~. The electrode includes~~ and having, on a face ~~which will be~~ aligned across a machining gap from the workpiece, a pattern of grooves ~~which are~~ to be defined on the workpiece~~; the pattern comprises conductive elements so that the necessary current flow between the workpiece and the electrode can be established~~. As ~~the~~ an electrolyte is pumped into or through the machining gap ~~between the workpiece and the dynamic electrode~~ at a constant static pressure, the ~~dynamic~~ electrode reacts to the pressure by moving toward or away from the workpiece to establish ~~the~~ a certain gap width to create the necessary groove depth and definition. The force acting on the slide electrode ~~slide~~ assembly is the primary controlling factor for establishing the machining gap as the electrode and ~~dynamic~~ support move in response to the constant static pressure of pumped electrolyte.